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ABSTRACT

A study examined vocational education in the state of Missouri with respect to current and future labor market needs in the state, delivery systems for meeting these needs, and current funding patterns for Missouri's vocational and technical education program. Based on their analysis of employment projections for Missouri, the researchers concluded that the shift away from agriculture and manufacturing into the service occupations will continue and that high technology industries presently constitute less than 8 percent of Missouri's industrial sector. In 1983, Missouri had a total of 432 schools serving as the state's primary public vocational education delivery system at an annual cost of over $100 million. During the same year, vocational programs were supported by $14,089,735 in Federal grants, $24,265,914 in state allocations, and $81,555,241 in reported local contributions. After analyzing these data, the researchers formulated 25 recommendations directed at policymakers responsible for vocational education funding and programming in Missouri. Included among these were recommendations for developing vocational programs that strike a fine balance between meeting the immediate requirements of today's employers and assuring a labor force with the abilities, character, and flexibility to adapt to an uncertain future and for using labor market needs as the primary factor in determining levels of state fiscal support for new programs. The appendixes list four project consultants and members of the 1984 Vocational Study Committee. (MN)

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THE YEAR OF THE PUBLIC SCHOOLS, 1983-84

ED247384

Vocational Education Trends and Priorities

A Study of Vocational Education in Missouri

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Reaching for Excellence In Education

Vocational Education Trends & Priorities

A Study of Vocational Education in Missouri

Final Report
of
The 1984 Vocational Study Committee

Department of Elementary and Secondary Education
Division of Career and Adult Education

July 1984

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Preface

This study is a direct result of a successful collaboration among Missouri business, legislative, governmental, and educational leaders. The study was funded by the Missouri General Assembly and guided by the Missouri Department of Elementary and Secondary Education, Division of Career and Adult Education, with technical and research assistance provided by the College of Education, University of Missouri-Columbia and four commissioned consultants (See Appendix I).

Acknowledgments

The Missouri State Board of Education and I are indebted to many individuals who contributed generously of their time and talent to the statewide study of vocational education in Missouri. Particularly, I want to thank

- The Missouri General Assembly for its wisdom in initiating the study and providing funding for its conduct;
- The Office of Administration for its cooperation in initiating and planning the study;
- Dr. Frank Drake for his outstanding leadership and the staff of the Division of Career and Adult Education for their efforts and cooperation;
- Dr. Bob Woods, Dean of the College of Education, UMC, for permitting Dr. Wil Miller and Dr. Lynda West to coordinate the UMC Research Team efforts;
- The 1984 Vocational Study Committee members, without whose efforts this study could not have been conducted;
- The consultants for sharing their expertise and professional judgments;
- The various groups of citizens who assisted the 1984 Vocational Study Committee in its research efforts, particularly
  - Business and Industry Leaders,
  - Area Vocational-Technical School Directors,
  - Vocational Instructors,
  - Vocational Students,
  - University of Missouri-Columbia, College of Education Research Team

for their participation in surveys which helped with an evaluation of vocational education in Missouri. Through the efforts of the above-named persons and groups, vocational education in Missouri will be enhanced.

Arthur L. Mallory
Commissioner of Education

Introduction

Business people, legislators, and other state and community leaders lack intimate knowledge of the organization and the delivery of vocational education programs over the state. Yet, these individuals are often asked to support the system with their votes, their money, their hiring practices and their time. These same individuals are infrequently involved in the comprehensive review and analysis of critical issues facing vocational/technical education. The primary purpose of *Vocational Education Trends and Priorities: A Study of Vocational Education in Missouri* was to address the following three major goals with input from representatives of groups of Missouri citizens who have a stake in the future of vocational education.

Goal I. To identify and analyze the current and projected labor market needs for the State of Missouri that can be met appropriately by the State's vocational and technical education delivery system with available and anticipated resources.

Goal II. To describe the scope and nature of the current system of vocational and technical education in Missouri and recommend any modifications necessary to cause the delivery system to be increasingly responsive to current and projected labor market needs.

Goal III. To describe the current funding pattern for Missouri's vocational and technical education program and recommend modifications necessary to implement a delivery system required to meet current and projected labor market needs through the year 2000.

Labor Market Needs

The study's first goal focused on Missouri's labor market needs for personnel with preparation of less than a baccalaureate degree. The committee struggled with the multitude of variables which must be taken into account if vocational education is to be responsive to labor market needs that are constantly in a state of flux.

The characteristics of the labor market itself frequently change. These dynamics cause regions of the country, states and even cities to reach different conclusions when faced with the need to bring about solutions to similar problems. Changing characteristics such as population, economy, and industrial development, to name a few, can have a major impact upon the labor market. An accurate analysis of these and other characteristics is an essential element of planning for vocational education. To make appropriate decisions and recommendations concerning the design of delivery systems and resource allocations to that system, it was appropriate to first examine the dynamics of the Missouri labor market.

Overview of the Missouri Labor Market

Population and employment in Missouri have grown at a rate considerably below the U.S. average during the past two decades. Trends in industrial employment, however, have followed national trends, as they have shifted away from agriculture and manufacturing into the service occupations.

The occupational composition of nonmanufacturing firms is distinct from that found in manufacturing. In particular, nonmanufacturing firms have far fewer skilled production jobs--occupations for which vocational and technical education has

traditionally played an important role. Nonmanufacturing also has relatively low annual earnings for full-time workers.

While the state's manufacturing employment base is shrinking, patterns of change within this sector have been mixed. Traditional manufacturing industries such as textiles, apparel and leather, have been declining, whereas several manufacturing industries associated with "high technology," including instruments, electrical and electronic equipment and aircraft, have been experiencing relatively strong growth.

Much of the structural change in the state during the past two decades has been accommodated by a relatively large influx of females into the labor market. The vast majority of female workers were absorbed by the fast growing services, retail trade, finance, insurance and real estate sectors. In contrast, the occupational categories that experienced relatively slow growth or decline were dominated by male workers.

By 1982, Missouri's employment mix was strikingly similar to that of the U.S. economy overall. In the state and in the nation, 22 percent of all wage and salary employment was in the services sector, 20 percent was in manufacturing and 16 percent was in retail trade. Missouri has a slightly larger proportion of its employment in the transportation, communications and public utilities and wholesale trade sectors than the U.S. in general. Within manufacturing, the state has a disproportionately large share of employment in the transportation equipment as well as the electrical and electronic equipment industries. A relatively small share of the state's employment is in the construction, mining, agriculture, and finance, insurance and real estate sectors.

Vocational and Technical Education and Projected Labor Market Needs

Employment projections suggest that the shift away from agriculture and manufacturing and into service occupations will continue. Three nonmanufacturing sectors--services; finance, insurance and real estate; and transportation, communications and public utilities--are expected to account for two-thirds of all new jobs in the state through 1985. Past trends in manufacturing are also expected to continue. While manufacturing is expected to account for approximately 12 percent of all job losses through 1985, it should also account for 14 percent of all new jobs generated in the state.

Occupational projections suggest that clerical, managerial and service occupations will expand relatively fast through 1985, with clerical occupations alone comprising one of every four job openings. Average growth is projected for sales and craft occupations, while slightly below average growth is anticipated for professional, technical and operative occupations. Laborer jobs are expected to grow slowly, while farming occupations are projected to decline. Overall, the bulk of the job openings in the state will come from replacement needs due to retirements, deaths and termination, rather than through the addition of new jobs resulting from growth.

Identification of projected job openings by specific occupation is just the first step in determining educational and training needs. Before translating job openings data into vocational and technical education programs, alternative sources of labor supply should be considered. Could the unemployed, re-entrants to the labor market or current employees fill those vacancies? In addition, the expected duration of skill shortages, rates of pay for projected jobs, and patterns of migration should also be analyzed. By themselves, statistics on employment demand (even when compared with data on the supply of training program completions) may be misleading and suggest erroneous policy implications.

Moreover, there are inherent limitations in the underlying assumptions and techniques used in employment projections. Employment projections more accurately portray employment needs in the relatively stable, traditional industries than the skill mismatches in occupations experiencing sudden changes in employment or training needs in areas of new and emerging skills. They tend, therefore, to be better indicators of "replacement" needs than new job openings. Furthermore, as statewide projections represent aggregate data of many varied and distinct labor market areas, they may not indicate future employment needs in any particular substate area.

Given these problems, it is important to supplement statewide projections with additional types of data. Information from employers, government officials, guidance counselors and placement officers should be used on an on-going basis to monitor local employment trends and new areas of growth.

Meeting Skill Needs of "High Technology"

"High technology" industries, including the electrical and electronic equipment, instruments, aircraft and chemicals industries, are a small, less than 8 percent, but nevertheless a dynamic component of the state's economy. Skill levels and average earnings in these manufacturing industries are considerably above those in the rapidly growing services, retail trade and finance, insurance and real estate sectors.

"High technology" industries are identified, in part, by their dependence on highly skilled professional and technical workers; however, blue collar and clerical jobs continue to account for the majority of employment in these industries. Furthermore, as wages and other compensation in "high tech" firms often compare favorably with alternative employment opportunities, skill shortages attributable to the influx and growth of "high technology" firms often spill over into the non-high technology sector.

Vocational and technical education clearly has a role to play in meeting the needs of the "high technology" sector. Technicians, electricians, secretaries, welders, machinists and custodial service occupations, for instance, are all important components of the state's "high technology" industries today. Schools cannot hope to prepare workers for specific job skills needed in companies operating at the "cutting edge" of new technologies. However, as a technology develops and as demands for new skills expand, skills become more generalized and transferrable among employers. Training can then be formalized and should be transferred to the educational institutions.

Vocational and technical education also has a role in facilitating structural change and fostering economic growth and development more generally in the state. Education and training policy should be a cornerstone of a more broadly-based local economic development strategy that recognizes the need for diversification of firms and industries in an area and for flexible workers able to adapt to industrial and occupational shifts in employment over time.

Delivery Systems for Vocational Education

Even though the concept of vocational education can be traced back centuries, the foundation for today's vocational system is, perhaps, only a century old. Today, as the twenty-first century is on the horizon, much of the early 1900's vocational education system's philosophical foundations are still in place across the United States. Few, if any, of these systems are designed to address the needs of a changing workplace. Recognizing this, Missouri's educational leadership agreed to address, as part of this study, the delivery system for vocational education in Missouri.

Current Systems of Vocational Education

Few, if any, disciplines of education are as misunderstood as vocational education. The reasons for this are easy to see. No area of education is more complex, and none has changed as substantially as vocational education has over the past two decades.

Every state provides vocational education to its citizens. The structure, organization and scope varies, as does its impact within the educational system. Each state has its own approach to the provision of vocational education opportunities. These systems vary widely from state to state. Most states have designed their systems to meet the needs of the service receivers (business, industry, students, etc.) on the local or regional levels.

Missouri's System

In 1983, Missouri had a total of 432 schools serving as the state's primary public vocational education delivery system.

Area Vocational Centers (Specialized Regional Vocational Schools)	58
Community or Junior colleges with Occupational or Technical Programs	16
Comprehensive High Schools (General High School Offering One or More Vocational Education Programs)	358
Total	432

Vocational education enrollment in Missouri's system has shown a steady increase of about 12 percent per year over the last decade. Over 250,000 students were served in 1983 in various phases of vocational education in the state. The cost of these programs was over $100 million.

Total funding for vocational education in Missouri has increased by 25 percent in recent years. The state now spends three times more to support vocational education than it did a decade ago. Further, increased investments in vocational programming, with greater funding discretion and flexibility, are necessary.

In Missouri, 96 percent of the persons available for employment following completion of a vocational education program were placed in a job, compared to a 90 percent rate nationwide.

With a vocational system of fifty-eight area vocational schools throughout the state, training can be provided efficiently and economically at nearly any location in Missouri. Ninety-five percent of Missouri residents live within twenty-five minutes of a vocational-technical school.

Missouri's vocational education system offers coursework in six major occupational areas and over 100 subareas.

With over 430 service providers in Missouri, there still may be a wide difference in the numbers of programs offered in one school versus another. However, strides are being taken to address this potential inequality. The table below demonstrates a significant increase in program offerings.

Grouping of Area Vocational Schools
by Number of Programs

Size	No. of Programs	No. of Schools in Mo.	
		1975	1983
Small	0-5	20	0
Medium	6-10	27	8
Large	11-20	7	42
Very Large	21 and Larger	1	8

The data show that there are a number of large and very large area vocational schools in Missouri, no small, and eight medium-sized schools. The majority of very large schools in Missouri are in the metropolitan areas of St. Louis and Kansas City. While additional expansion is necessary, these data, when compared with 1975 data, show significant growth and obvious commitment to vocational education by decision-makers in Missouri.

In addition to the actions taken by local vocational education service providers to meet the needs of business and industry, the Division of Career and Adult Education has created a quasi-system of delivery called Industry Training Projects. This system is designed to be responsive to the immediate needs of business and industry. There are many types of service deliverers in Missouri giving the total delivery

system for vocational training a great deal of potential. The final product of this Industrial Training Program is a tailor-made training program customized to meet the needs of the new or expanding company.

10.

Fiscal Resources

The final goal addressed in this study focuses on financial considerations necessary to implement a delivery system required to meet current and projected labor market needs through year 2000.

Vocational-technical education, historically both at the secondary and post-secondary level, has had to meet a more rigorous social, political, and economic test than general or liberal arts education. This is justifiable, to some extent, because the average cost of educating a vocational-technical student generally exceeds that of educating a general education student at the secondary level or a liberal arts post-secondary student.

These higher educational costs must be justified by higher economic or non-economic return. It is likely that all types of public secondary and post-secondary education have similar impacts on the socialization of students. Also, given the range of talents and preferences among the educable population, the range of educational choices provided satisfy the goal of providing a broad, democratically based access to the type and level of education that suits each young citizen best. Therefore, one should look for justification in the higher cost of vocational-technical education mainly in the form of higher labor market earnings over a person's lifetime.

This fact then imposes obligations and constraints on legislators and vocational-technical education planners and administrators that differ qualitatively from the obligations on those who plan and execute general and liberal arts education. Vocational-technical education planners and administrators must look more to the current and changing needs of the labor market and industry and must do so in a very specific sense: detailed knowledge is required of the relative demand for

occupational skills that will be needed by local, state, and national economy. Modern, industry-relevant curricula must then be designed and properly executed. This is difficult. The whole system must then be updated continuously. As a result, the management information needs, even as the problem is attacked at a general level, are much greater and represent a more continuous demand on management and planning resources than for general and liberal arts education. However, these activities are not beyond the resource and skill levels of educators and planners.

Overview of Funding

The growth of vocational education in Missouri from 1980-1986 is illustrated below. It is this growth that has mandated expanded funding for vocational education.

Growth of Vocational Education
1980-1986

Year	Number of Students	Number of Teachers
1980-81	273,652	6,974
1981-82	274,365	6,998
1982-83	278,817	7,162
1983-84*	284,000	7,200
1984-85*	290,000	7,250
1985-86**	290,000	7,300

*Estimated.
Includes new area school and adult programs.

**Estimated.
Does not include new or expanding programs.

The funding pattern for vocational education in Missouri can best be shown in the following table.

Vocational Education Funding
1980-1985

Year	Federal Grant	State Allocation	Local Reported Contribution
1980	15,118,982	18,555,493	75,329,790
1981	17,507,029	20,386,550	70,978,512
1982	14,781,224	21,984,035	79,206,957
1983	14,089,735	24,265,914	81,555,241
1984	16,006,755	24,425,914	85,000,000*
1985	16,183,125	26,203,844	90,000,000*

*Estimate

The following set of recommendations is reflective of the growth and expansion of vocational education in Missouri.

Recommendations

The 1984 Vocational Study Committee acknowledges that the current system of vocational and technical education is providing opportunities for many Missouri citizens to develop job related knowledges, skills, and abilities below the baccalaureate level. The continuance and improvement of this system is important to individuals as well as the economy of the state. While it is believed that the system can be improved through the following recommendations, it is essential that adequate funding be provided as the recommendations are being implemented.

1. Information about current and projected labor market opportunities should be required in support of all administrative decisions affecting the location, size, content and continuity of vocational and technical education offerings in Missouri.

   Rationale: *The futility of mandating a decision criterion that cannot be applied in a consistent (i.e., equitable) manner is recognized. Sufficient controversy exists about the reliability of available data to urge caution in mandating labor market "need" as the sole criterion for administrative decisions. It is, however, appropriate to place the following burden of evidence on a given program's advocate(s): "What evidence can you offer in support of your proposed administrative action that demonstrates a current and projected labor market need, which can and should be met through public vocational and technical education offerings in your jurisdiction?"*

2. The Missouri Occupational Information Coordinating Committee (MOICC) should be relied upon as the primary source of routinely recurring labor market information. Labor market information available through the MOICC should be complemented by consistent locally based inquiries involving both educators and private industry representatives. State-level leadership is crucial to minimize duplication of effort, while increasing the comparability of information among the substate areas.

Rationale: *Statutory member agencies of the MOICC (e.g., the Missouri Division of Employment Security and the Department of Elementary and Secondary Education) are the primary sources of administrative data that offer the only consistent and routinely available information about employment and trainees. Substantial skepticism about the accuracy and local relevance of routinely recurring labor market information series can be expected to continue. Therefore, local administrative personnel should be encouraged to utilize such information in conjunction with complementary data collected locally. It must be recognized, however, that expertise in these matters is severely limited at the local level. Therefore, the recommendation emphasizes a need for state-level technical support, which is the only way reliable and reasonably comparable information can be collected and aggregated by substate areas. The Private Industry Council (PICs) and local level vocational educators must work cooperatively to take the necessary actions. (The Vocational-Technical Education Amendments of 1984 can be expected to encourage actions consistent with this recommendation.) Local Private Industry Council members and vocational and technical educators should utilize local labor market information for program planning purposes with special attention given to a broad range of "success factors" to help decide where specific vocational education programs should be provided. In the spirit of recommendation number one, it is recognized that no single criterion will suffice as a rigid standard for program review purposes. Information of the types cited here can strengthen the documentation about individual program potential and accomplishments.*

3. Vocational and technical education program planners at the state and local levels must strike a fine balance between serving the immediate requirements of today's employers, on the one hand, and assuring a labor force that has the abilities, character and the flexibility to adapt to an uncertain future in terms of occupational requirements that will enhance Missouri's longer-range competitiveness, on the other hand.

   Rationale: *Funding criteria, such as placement rates, may have unintended consequences. Among the most untoward results of such allocation rules, one might expect too much attention to be given to the immediate placement transaction, at the expense of equally worthy criteria (e.g., employment stability, promotional opportunity, personal job satisfaction, earnings and competitiveness in the event of a desire or need to change jobs.)*

4. Vocational and technical education must continue to act in an advocacy capacity on behalf of all students, whether they are male or female, white or black, Hispanic or Native American, handicapped or not.

   Rationale: *Here, too, funding allocation criteria can have perverse effects. Again, placement rates might be harder to achieve for particular constituencies. It is recognized that stigmatization is a serious concern among vocational educators. Nevertheless, vocational and technical education, both in its traditional form(s) and in exciting new initiatives that have already begun in Missouri, offers the best route to productive and satisfying employment for many students. It is well known that employment growth will continue to be concentrated in occupations that have been held predominantly by females.*

5. Equitable service must be provided to selected constituencies by identifying the employment opportunities and the ways in which the vocational and technical education system intends to prepare people for these opportunities before focusing on the designees themselves.

   Rationale: *Too often, in the past, target groups were singled out and then "appropriate" employment goals were established. The recommended approach offers a greater potential for genuine equitable service. It is recognized that the development of competencies by individuals and their subsequent placement in productive and personally satisfying employment may require different approaches and differential resource commitments. Both the delivery system and the allocation criteria must be designed to promote open access. Substantial attention must be given to "sorting out" the types of offerings that are to be made available at various levels.*

6. The state's classification requirement that "a vocational aptitude battery be administered to all students prior to graduation" be changed to require administration of such battery in either the ninth or tenth grades and, further that the battery's results be utilized as part of the counseling process directed toward career related decisions.

   Rationale: *For secondary school youth to set informed career goals, they need as much information as possible regarding job responsibilities and requirements as well as their own strengths and weaknesses; therefore, testing of the students' interests, aptitudes, and abilities at the ninth or tenth grade levels would assist them in establishing career goals and planning their own program of studies to meet those goals.*

7. Accurate information about many aspects of employment dynamics in Missouri is now, or potentially, available. Opportunities to take advantage of these data to strengthen management practices in vocational and technical education should be encouraged.

   Rationale: *Many state agencies collect administrative data that could be of substantial value in directing the focus of the limited resources available to vocational and technical education. Responsible use of these data by professional analysts is extremely limited at the present time.*

8. Vocational and technical education should assume an explicit stimulus role in developing entrepreneurship skills which will result in job creation.

   Rationale: *Enhancement of entrepreneurship, through the vocational and technical education system, is a frontier that has received relatively little attention to date. The potential for net job creation through encouragement of new business formation should be explored.*

9. Labor market needs should be a primary factor utilized by the state agency in determining the level of state fiscal support for new programs:

   a. New programs should be established only when data show an undersupply of workers in the respective program area;

   b. Decisions should be made to terminate programs that are not addressing current or projected labor market needs;

   c. Underserved areas should receive high priority consideration for funding and program expansion.

Rationale: *In some schools, programs are currently being offered in curricular areas that cannot be justified by labor market demand. This practice does a disservice to those individuals expecting to get a job in an occupation related to the training received upon successful program completion. It also is a disservice to the employers in other fields of work that are severely undersupplied. Finally, when funds are allocated to training in an oversupply area, those funds can not have a maximum training impact. Especially in a time of tight budgets and limited resources, the local, state, and federal investment in vocational education must be maximized.*

10. Credit toward graduation should be allowed for those vocational classes which provide substantially the same competencies as other specified courses to meet increased graduation requirements.

Rationale: *Vocational classes could provide the same knowledge, skills and attitudes desired by the state and local boards of education. This recommendation, when implemented, will recognize this fact and permit local boards to make their own decisions related to course comparability within established guidelines.*

11. Department of Elementary and Secondary Education regulations should be altered to permit a student to have one, two, or three class periods of vocational instruction per day.

Rationale: *This recommendation offers substantial flexibility in scheduling for students and local vocational administrators. This change could provide local vocational administrators with the opportunity to offer courses in areas of need as targeted by employers. It should also be noted that, if implemented, opportunity would be present to abuse the system; therefore, precautionary steps should be taken to assure that all funded programs are vocational.*

12. The State Department of Elementary and Secondary Education should create a set of standards for all programs in vocational education. These standards should not only reflect minimum compliance, but also meritorious levels of excellence. These standards should address, but not be limited to, the following:

    a. Instructional excellence
    b. Curriculum
    c. Advisory committee participation
    d. Equipment
    e. Teacher certification
    f. Vocational student organizations

    Rationale: *Currently, these standards do not exist. Implementing quality standards will improve the vocational education delivery system in Missouri. Many of these quality standards will be low-cost and will add substantially to the quality of vocational education in Missouri.*

13. There should be a standardized list of minimum competencies for all vocational subject areas adopted by the State Board of Vocational Education. Programs should include a basic core of instruction that emphasizes employability skills such as:

    a. Evaluation and analysis
    b. Critical thinking
    c. Synthesis
    d. Proper work attitudes
    e. Problem solving
    f. Reasoning

Rationale: *A standardized list of minimum competencies for all vocational subject areas will:*

a. Guarantee a minimum level of competency for all graduates;
b. Communicate clearly the minimum level of expectation for program completion;
c. Assure instruction not only in the technical areas but also in employability skill areas;
d. The transferable employability skills are valuable to students regardless of the job they ultimately hold.

14. The Department of Elementary and Secondary Education should provide funding for research projects that will enhance the information base related to teacher supply and demand, teacher retention, teacher recruitment, and instructional effectiveness in vocational education.

Rationale: *Today, the greatest challenges facing the vocational administrator focus on two categories: teachers and quality of instruction. Any research that will help administrators address these two categories will help administrators make appropriate decisions and, therefore, will help improve vocational education in Missouri.*

15. The Department of Elementary and Secondary Education, working in cooperation with the state's universities, develop and offer preservice and inservice programs to instruct teachers and counselors at all levels about vocational education philosophy and programs.

Rationale: *Currently, only limited numbers of offerings are available in Missouri, and none have been targeted in recent years to the identified population. Implementation of this recommendation will (a) help students ultimately make better career decisions, and (b) assist teachers and counselors in providing better informed advice or counsel to their students and peers.*

16. Local and state leaders need to consider the addition of and increased support for non-traditional delivery systems for vocational education, and the Division of Career and Adult Education should provide incentives and encouragement for:

    a. Schools without walls
    b. Cooperative programs with business and industry as well as other training agencies
    c. Skill centers
    d. Television/cable classes
    e. Shopping mall-based operations
    f. Mobile training services
    g. Etc.

    Rationale: *A more flexible system designed to respond as efficiently as possible to business and industry's needs is desirable. The addition of the non-traditional systems proposed will provide this flexibility while streamlining and in many cases providing training at a lower cost per trainee.*

17. The Division of Career and Adult Education should plan and implement a multi-media public relations package that describes the Missouri vocational education story.

    Rationale: *Though there is some effort being made currently to promote vocational education in Missouri, not enough is being done. Missouri has a fine system of area vocational/technical schools, many outstanding programs, instructors, and students. These and many other highlights should be pointed out for the legislature, school boards, business and industry, other educators, general public, other leaders, and especially the students. These people need to hear and read about the quality of vocational education in Missouri.*

Recommendations

18. Schools must place a priority on the development of positive work attitudes, mature social relations, communications skills, and basic education competencies.

    Rationale: *This is a directive from business and industry leaders. These leaders, in survey after survey in America, rank these competencies among the top educational priorities.*

19. Vocational education programs that have employment as a primary goal should receive no state vocational funding if their placement rate is less than 25 percent and should receive reduced funding if their placement rate is less than 50 percent. If their placement rate exceeds 80 percent, they should receive an increased funding rate.

    Rationale: *Though the percentages were picked arbitrarily, the message here should be "If a local school board says its program is primarily vocational preparatory, then that program should be rewarded for effectiveness and penalized for ineffectiveness."*

20. Current funding procedures should be modified with consideration given to incentive programs based on measureable performance criteria to include, at a minimum, placement and other criteria such as earnings, employment stability, and advancement potential.

    Rationale: *Vocational education has asserted that its higher costs are justified in light of its impact upon employment and improvement of the economy. Yet, no outcome measure is used in making state funding decisions.*

21. The current Management Information System (MIS) in vocational and technical education should be improved to measure and monitor performance outcomes.

    Rationale: *A funding mechanism which utilizes outcome measures cannot occur unless data are collected in a uniform and verifiable manner.*

22. Adequate funds are needed for vocational and technical education. In order to fund vocational and technical education at an appropriate level, consideration should be given to possibilities such as taxing districts, contractual agreements with sending schools, reallocation of funds, actual dollars available to sending districts, and elimination of duplication of programs.

    Rationale: *If the state is to provide a viable system of vocational and technical education, an adequate funding level is essential. Consideration should be given to all possible sources of revenue.*

23. Needless duplication and inappropriate competition among all institutions and agencies conducting vocational-technical education should be eliminated.

    Rationale: *To determine whether or not maximum productivity is being achieved from every dollar invested in vocational and technical education in the state is an important objective. This would include concern about vocational funding for comprehensive high schools where such programs can be obtained at an area vocational-technical school.*

Recommendations

24. Allocations to either lease or lease/purchase equipment should be permitted.

    Rationale: *To allow vocational programs to have access to "state of the art" equipment, it will be necessary to have the flexibility to lease.*

25. Funds should be made available for upgrading and retraining vocational instructors. Consideration should be given to sabbaticals, industry/school personnel exchange programs, workshops, seminars, and the replication of model programs.

    Rationale: *In order to remain current in their field, vocational instructors must have opportunities to upgrade their skills in this period of technological advancement.*

Appendices

Appendix I

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